CHAPTER 2

Switch Installation

This chapter describes how to start your switch and how to interpret the power-on self-test (POST) that ensures proper operation. It also describes how to install the switch.

Read the topics and perform the procedures in this order:

- Preparing for Installation, page 2-1
- Verifying Switch Operation, page 2-5
- Mounting the Switch, page 2-5
- Installing a Cover for the Reset Button (Optional), page 2-24
- Installing the Power Cord Retainer (Optional), page 2-25
- Installing the Cable Guard (Optional), page 2-28
- Connecting Devices to the Ethernet Ports, page 2-33

Preparing for Installation

- Warnings, page 2-1
- Installation Guidelines, page 2-3
- Equipment That You Supply, page 2-4
- Box Contents, page 2-4
- Powering the Switch, page 2-4

Warnings

These warnings are translated into several languages in the *Regulatory Compliance and Safety Information for the Catalyst 3560-C and the 2960-C Switches* guide.

Warning **Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.** Statement 43

Warning **Read the wall-mounting instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation to people and damage to the system.** Statement 378

Warning **Do not work on the system or connect or disconnect cables during periods of lightning activity.** Statement 1001

Warning **Read the installation instructions before connecting the system to the power source.** Statement 1004

Warning **This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than:**
20 A Statement 1005

Warning **To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:**

- **This unit should be mounted at the bottom of the rack if it is the only unit in the rack.**
- **When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.**
- **If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.** Statement 1006

Warning **Class 1 laser product.** Statement 1008

Warning **This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.** Statement 1024

Warning **Ultimate disposal of this product should be handled according to all national laws and regulations.** Statement 1040

Warning **For connections outside the building where the equipment is installed, the following ports must be connected through an approved network termination unit with integral circuit protection: 10/100/1000 Ethernet.** Statement 1044

Warning **To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of: 113°F (45°C)** Statement 1047

Note For Catalyst 3560CG-8PC-S, 3560CG-8TC-S, and 2960CG-8TC-L switches, the maximum recommended ambient temperature is: 104°F (40°C).

Warning **No user-serviceable parts inside. Do not open.** Statement 1073

Warning **Installation of the equipment must comply with local and national electrical codes.** Statement 1074

Warning **To prevent airflow restriction, allow clearance around the ventilation openings to be at least: 3 in. (7.6 cm)** Statement 1076

Warning **Hot surface.** Statement 1079

Note Applies to the Catalyst 3560CG-8PC-S switch.

Installation Guidelines

Before installing the switch, these guidelines must be met:

- The operating environment must be within the ranges listed in Appendix A, "Technical Specifications."
- Cabling is away from sources of electrical noise, such as radios, power lines, and fluorescent lighting fixtures. Make sure that the cabling is away from other devices that might damage the cables.
- Airflow around the switch and through the vents must be unrestricted. We strongly recommend that you allow at least 3 in. (7.6 cm) of clearance from the left, right, and top sides of the switch to avoid any flow blockage. If you are installing the switch in a rack, allow at least 1.75 in. (4 cm) of empty rack space above each switch.
- Catalyst 3560CG-8PC-S, 2960C-8PC-L, 2960C-12PC-L, 3560C-8PC-S, and 3560C-12PC-S switches: Allow at least 1.75 in. (4 cm) clearance from the ends of the external heat sink fins.

- Temperature around the unit does not exceed 113°F (45°C).

  If the switch is installed in a closed environment or in a multirack assembly, the temperature around it might be greater than normal room temperature.
- Humidity around the switch must not exceed 95 percent.
- Altitude at the installation site must not be greater than 10,000 feet (3,049 meters).
- Do not place any items on the top of the switch.
- Do not wall-mount the switch with its front panel facing up. Following safety regulations, wall-mount the switch with its front panel facing down or to the side to prevent airflow restriction and to provide easier access to the cables.
- Clearance to the switch front and rear panels meets these conditions:
  - You can easily read the front-panel LEDs.
  - Access to ports is sufficient for unrestricted cabling.
  - The AC power cord can reach from the AC power outlet to the connector on the switch rear panel.
- For 10/100 and 10/100/1000 fixed ports, cable lengths from the switch to connected devices are not more than 328 feet (100 meters).
- For cable lengths for small form-factor pluggable (SFP)-module connections, see the "SFP Module Connectors" section on page B-2 and the module documentation.

Equipment That You Supply

You might need this equipment to install the switch:

- Number-2 Phillips screwdriver
- Drill with a #27 drill bit (0.144-inch [3.7 mm])

Box Contents

The switch getting started guide on Cisco.com describes the box contents. If any item is missing or damaged, contact your Cisco representative or reseller for support.

Powering the Switch

Before installing the switch in a rack, on a desk, a shelf, or a wall, you should power on the switch and verify that it passes POST.

Power the switch:

Catalyst 2960CPD-8PT-L and 2960CPD-8TT-L

- Connect a 10/100/1000 uplink port to a PoE or PoE+ switch, such as a Catalyst 3750-X.

  Or
- Plug the auxiliary power adapter cord into the switch AUX power connector and into an AC power outlet.

Note You can use both the uplink port and the auxiliary power adapter. However, the auxiliary power input takes precedence.

Catalyst 3560CPD-8PT-S

- Connect a 10/100/1000 uplink port to a PoE+ switch, such as a Catalyst 3750-X.

  Or

- Plug the auxiliary power adapter cord into the switch AUX power connector and into an AC power outlet.

Note You can use both the uplink port and the auxiliary power adapter. However, the auxiliary power input takes precedence.

All models (except the Catalyst 2960CPD-8PT-L, 2960CPD-8TT-L, and 3560CPD-8PT-S)

- Plug the AC power cord to the switch AC power connector and into an AC power outlet.

Verifying Switch Operation

As the switch powers on, it begins the POST, a series of tests that runs automatically to ensure that the switch functions properly. LEDs blink during the test, which lasts approximately 1 minute. When the switch begins POST, the System, Status, Duplex, and Speed LEDs turn green. The System LED blinks green, and the other LEDs remain green.

When the POST completes successfully, the System LED turns green. The other LEDs turn off and then reflect the switch operating status. If a switch fails POST, the System LED turns amber.

POST failures are usually fatal. Call Cisco technical support representative if your switch fails POST.

After a successful POST, unplug the power cord from the switch. Mount the switch in a rack on a desk or shelf, under a desk or shelf, or on a wall, as described in the "Mounting the Switch" section on page 2-5.

Mounting the Switch

- On a Desk or Shelf (without Mounting Screws)
- Desk, Shelf, or Wall (with Mounting Screws)
- With a Mounting Tray
- In a Rack
- On a DIN Rail

On a Desk or Shelf (without Mounting Screws)

Step 1 Locate the adhesive strip with the rubber feet in the accessory kit.

Step 2 Remove the four rubber feet from the adhesive strip, and attach them to the recessed areas on the bottom of the unit. This prevents the switch from sliding on the desk or shelf.

Note We strongly recommend that you attach the rubber feet. Doing so helps prevent airflow restriction and overheating.

Step 3 Place the switch on the desk or shelf.

Warning **To prevent airflow restriction, allow clearance around the ventilation openings to be at least: 3 in. (7.6 cm)** Statement 1076

After you mount the switch, see the "After Installing the Switch" section on page 2-31 for information about the switch configuration.

Desk, Shelf, or Wall (with Mounting Screws)

You can use the mounting screws to mount the switch:

- On a desk or a shelf
- Under a desk or a shelf
- On a wall

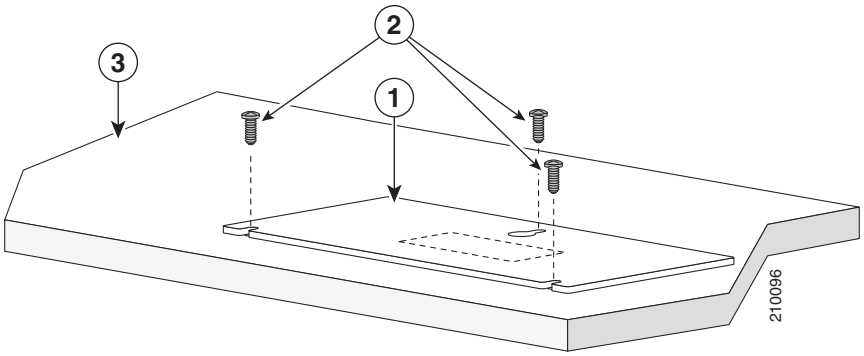
Desk- or Shelf-Mounting

Step 1 Use the screw template to align the mounting screw holes and also as a guide to make sure that you install the screws into the desk or shelf with proper clearance.

Step 2 Position the screw template on top of the desk or shelf so that the two side-by-side slots face the *front* of the desk or shelf, as shown in Figure 2-1. This ensures that the power cord faces the *rear* of the desk or shelf after the switch is installed.

Note Wait before you attach the screw template to the desk or shelf.

Figure 2-1 Installing the Mounting Screws on Top of a Desk or a Shelf



1	Screw template	**3**	Desk or shelf
2	Screws		

Step 3 Peel the adhesive strip off the bottom of the screw template, and attach it to the top of the desk or shelf.

Step 4 Use a 0.144-inch (3.7 mm) or a #27 drill bit to drill a 1/2-inch (12.7 mm) hole in the three screw template slots.

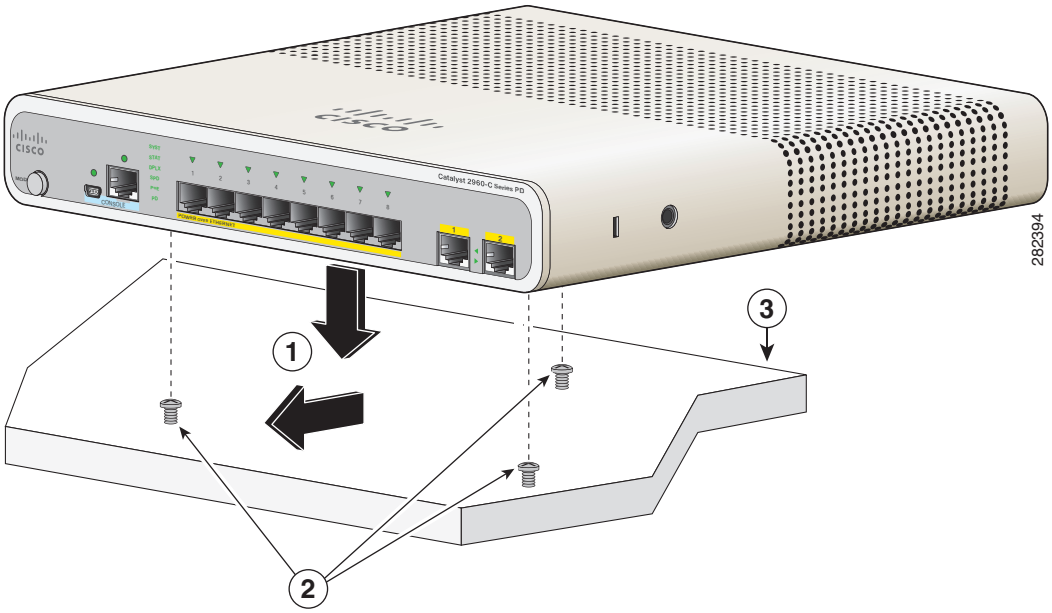
Step 5 Insert three screws in the slots on the screw template, and tighten them until they touch the top of the screw template.

Step 6 Remove the screw template from the desk or shelf.

Step 7 Place the switch onto the mounting screws, and slide it forward until it locks in place. See Figure 2-2.

Warning **To prevent airflow restriction, allow clearance around the ventilation openings to be at least: 3 in. (7.6 cm)** Statement 1076

Figure 2-2 Mounting the Switch on Top of a Desk or Shelf



1	Slides on this way	**3**	Desk or shelf
2	Screws		

After you mount the switch, see the "After Installing the Switch" section on page 2-31 for information about configuring the switch.

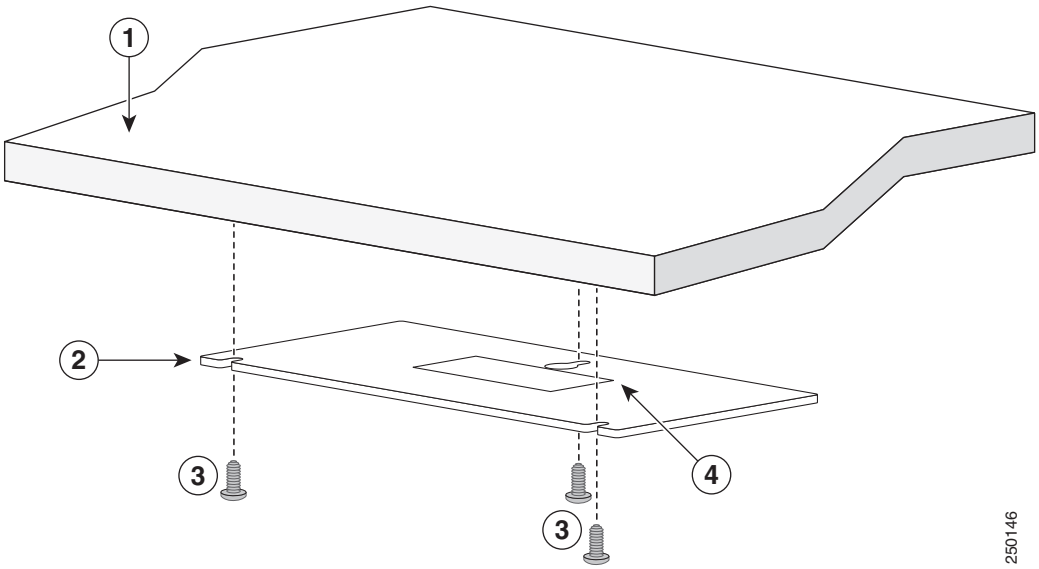
Under the Desk- or Shelf-Mounting

Step 1 Use the screw template to align the mounting screw holes and also as a guide to make sure the screws are installed under the desk or shelf with proper clearance.

Step 2 Position the screw template underneath the desk or shelf so that the two side-by-side slots face the *front* of the desk or shelf, as shown in Figure 2-3. This ensures that the power cord faces the *rear* of the desk or shelf after the switch is mounted.

Step 3 Peel the adhesive strip off the bottom of the screw template, and attach it to the underside of the desk or shelf.

Figure 2-3 Installing the Mounting Screws Under a Desk or Shelf



1	Desk or shelf	**3**	Screws
2	Screw template	**4**	Adhesive

Step 4 Use a 0.144-inch (3.7 mm) or a #27 drill bit to drill a 1/2-inch (12.7 mm) hole in the three screw template slots.

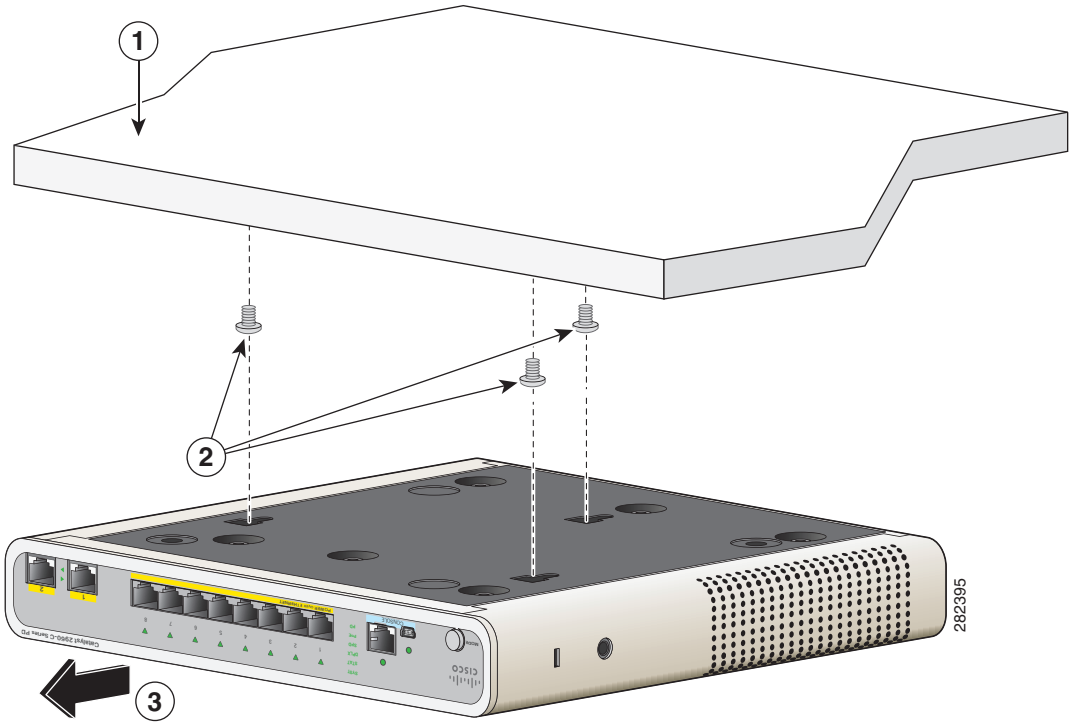
Step 5 Insert three screws in the slots on the screw template, and tighten until they touch the top of the screw template.

Step 6 Remove the screw template from underneath the desk or shelf.

Step 7 Place the switch upside down onto the mounting screws, and slide it forward until it locks in place. See Figure 2-4.

Warning **To prevent airflow restriction, allow clearance around the ventilation openings to be at least: 3 in. (7.6 cm)** Statement 1076

Figure 2-4 Mounting the Switch Under a Desk or Shelf



1	Desk or shelf	**3**	Slides on this way
2	Screws		

After you mount the switch, see the "After Installing the Switch" section on page 2-31 for information about configuring the switch.

Wall-Mounting

Warning **Read the wall-mounting instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation to people and damage to the system.** Statement 378

Caution Do not wall-mount the switch with its front panel facing up. Following safety regulations, wall-mount the switch with its front panel facing down or to the side to prevent airflow restriction and to provide easier access to the cables.

Step 1 Locate the screw template. The template is used to align the mounting screw holes.

Note Figure 2-5 shows the measurements for the location of the screws on the switch.

Step 2 Position the screw template so that the two side-by-side slots face toward the floor, as shown in Figure 2-6.

For the best support of the switch and cables, make sure that you attach the switch securely to a wall stud or to a firmly attached plywood mounting backboard.

Step 3 Peel the adhesive strip off the bottom of the screw template.

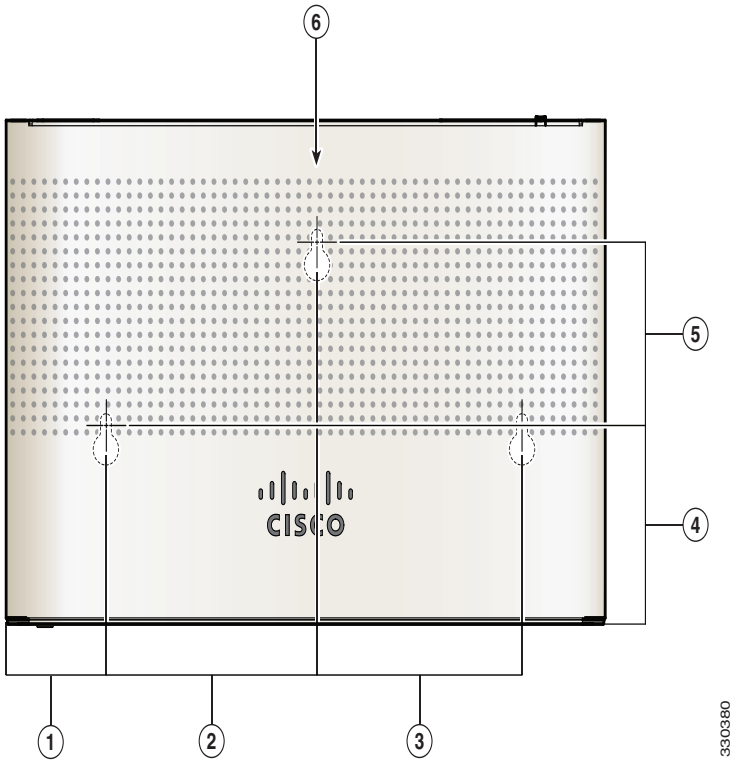
Step 4 Attach the screw template to the wall.

Step 5 Use a 0.144-inch (3.7 mm) or a #27 drill bit to drill a 1/2-inch (12.7 mm) hole in the three screw template slots.

Step 6 Insert three screws in the slots on the screw template, and tighten until they touch the top of the screw template.

Step 7 Remove the screw template from the wall.

Figure 2-5 Location of the Mounting Holes on the Switch



1	1.77 in. (4.49 cm)	**4**	2.67 in. (6.78)
2	3.72 in. (9.44 cm)	**5**	2.46. in. (6.24)
3	3.62 in. (9.19 cm)	**6**	Switch

Figure 2-6 Installing the Mounting Screws on the Wall

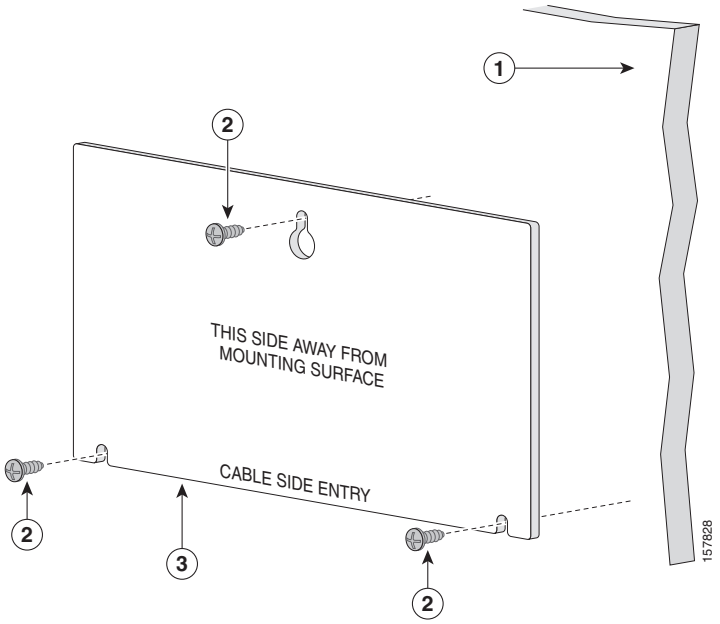
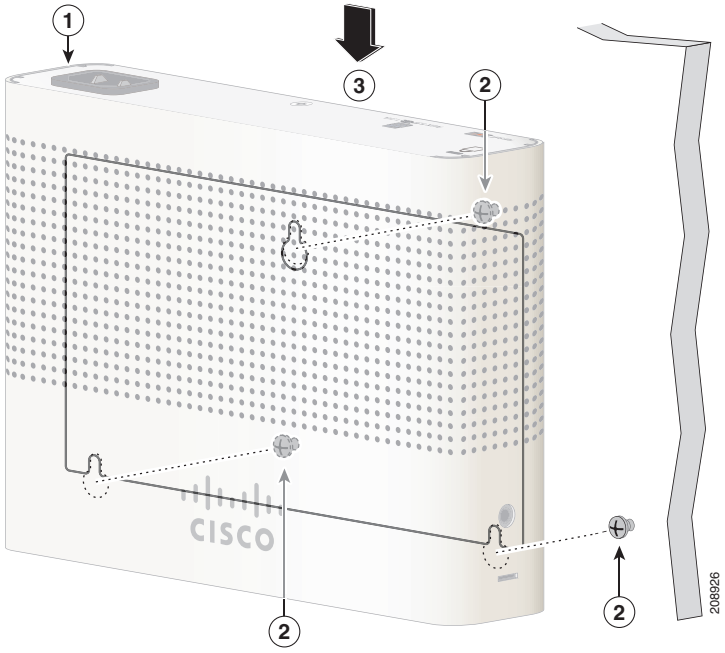


Figure 2-7 Installing the Switch on a Wall



Step 8 Place the switch onto the mounting screws, and slide it down until it locks in place. See Figure 2-7.

With a Mounting Tray

The mounting kit (part number CMP-MGNT-TRAY=) is optional. You can order it when you order your switch, or you can order it later from your Cisco representative.

The mounting kit ships contents:

- Two number-10 Phillips pan-head screws
- Three number-8 Phillips pan-head screws
- Mounting tray
- Magnet

You can use the mounting tray by itself with mounting screws, or with a magnet.

Mounting Tray with Screws

You can use the mounting tray to secure the switch:

- On a desk or shelf
- Under a desk or shelf
- On a wall

Caution Do not wall-mount the switch with its front panel facing up. Following safety regulations, wall-mount the switch with its front panel facing down or to the side, to allow sufficient airflow and to provide easier access to the cables.

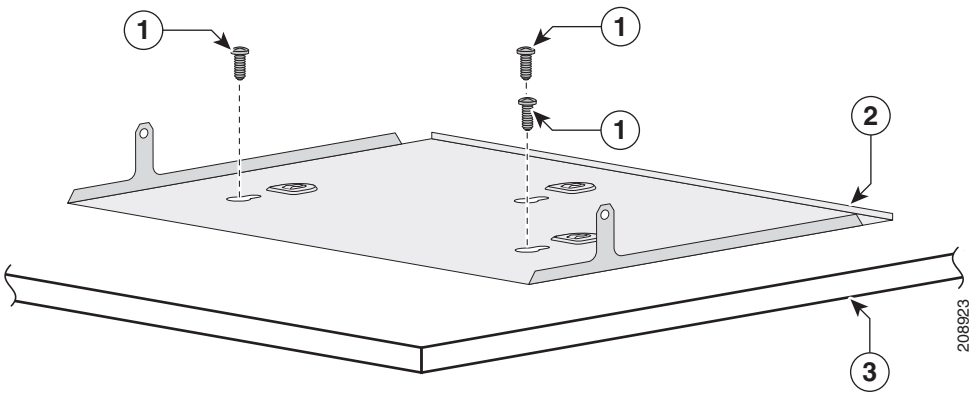
This example shows you how to mount the switch on a desk or shelf. You can use a similar procedure to mount the switch under a desk or on a wall.

Step 1 Place the mounting tray on the desk.

Step 2 Use a 0.144-in. (3.7 mm) or a #27 drill bit to drill three 1/2-in. (12.7 mm) holes in the desk. See Figure 2-8.

Step 3 Insert the three number-8 Phillips pan-head screws in the slots on the mounting tray, and tighten them.

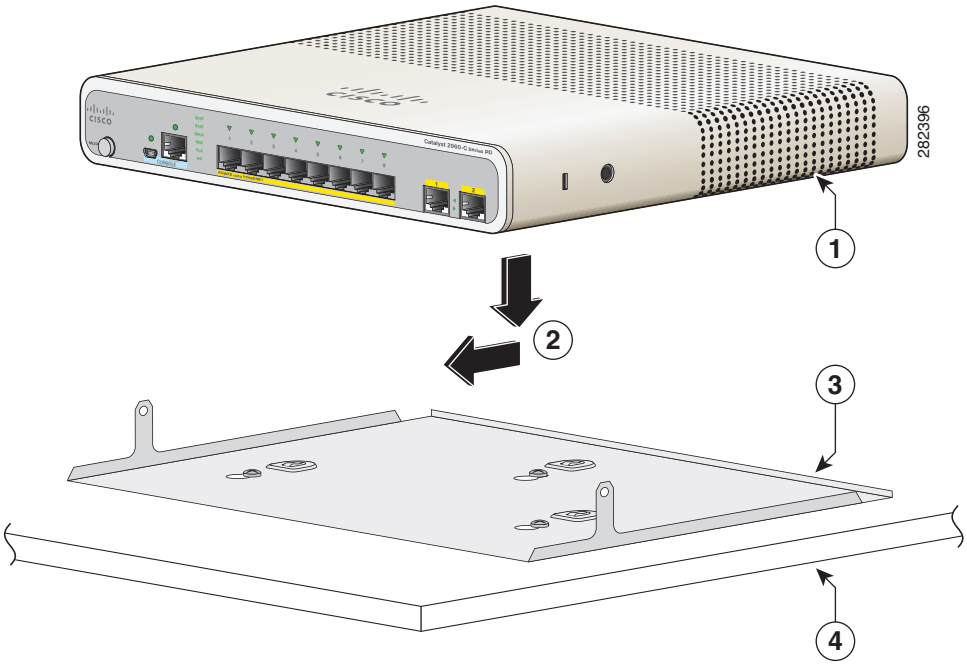
Figure 2-8 Attaching the Tray to the Desk or Shelf



1	Number-8 Phillips pan-head screws	**3**	Desk or shelf
2	Mounting tray		

Step 4 Place the switch onto the mounting screws, and slide the switch until it locks into place. See Figure 2-9.

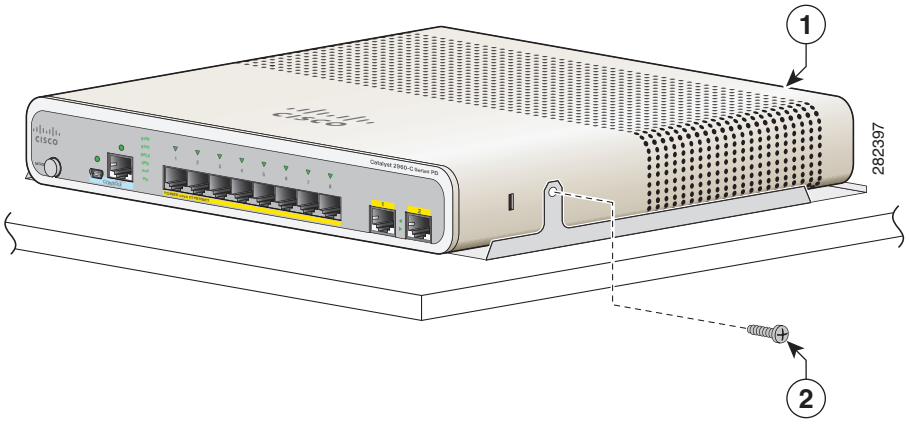
Figure 2-9 Installing the Switch on the Mounting Tray



1	Switch	**3**	Mounting tray
2	Sliding direction	**4**	Desk

Step 5 Use the two number-10 Phillips pan-head screws to secure the mounting tray to the switch. See Figure 2-10.

Figure 2-10 Securing the Mounting Tray to the Switch



1	Switch	**2**	Number-10 Phillips pan-head screws

Warning **To prevent airflow restriction, allow clearance around the ventilation openings to be at least: 3 in. (7.6 cm)** Statement 1076

Mounting Tray with a Magnet

You can use a magnet with the mounting tray to mount the switch:

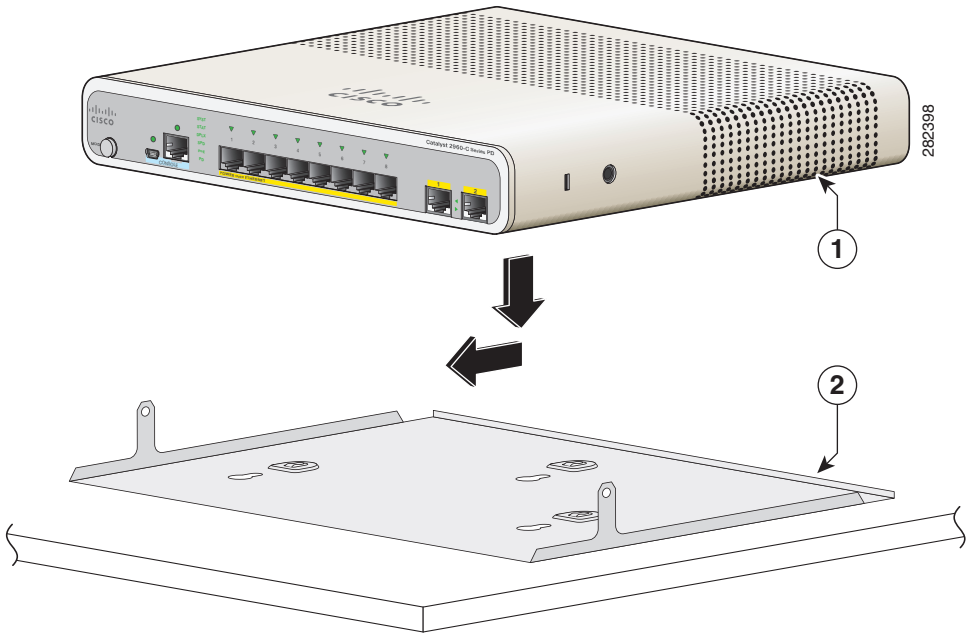
- On a metal surface
- Under a metal surface
- On a metal wall

Caution Do not use the magnet without a mounting tray.

This example shows you how to mount the switch on a metal wall. You can use a similar procedure to mount the switch under a metal desk or on a metal desk.

Step 1 Place the switch on the mounting tray. See Figure 2-11.

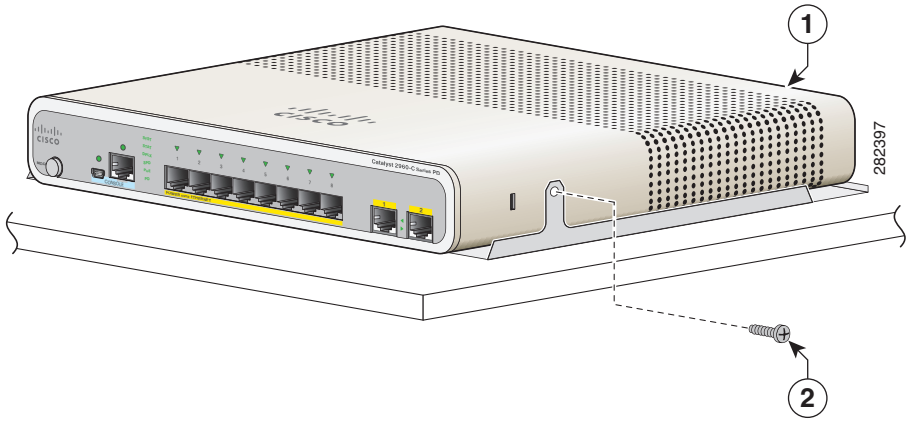
Figure 2-11 Placing the Switch on the Mounting Tray



1	Switch	**2**	Mounting tray

Step 2 Use the two number-10 Phillips pan-head screws to secure the mounting tray to the switch. See Figure 2-12.

Figure 2-12 Securing the Mounting Tray to the Switch



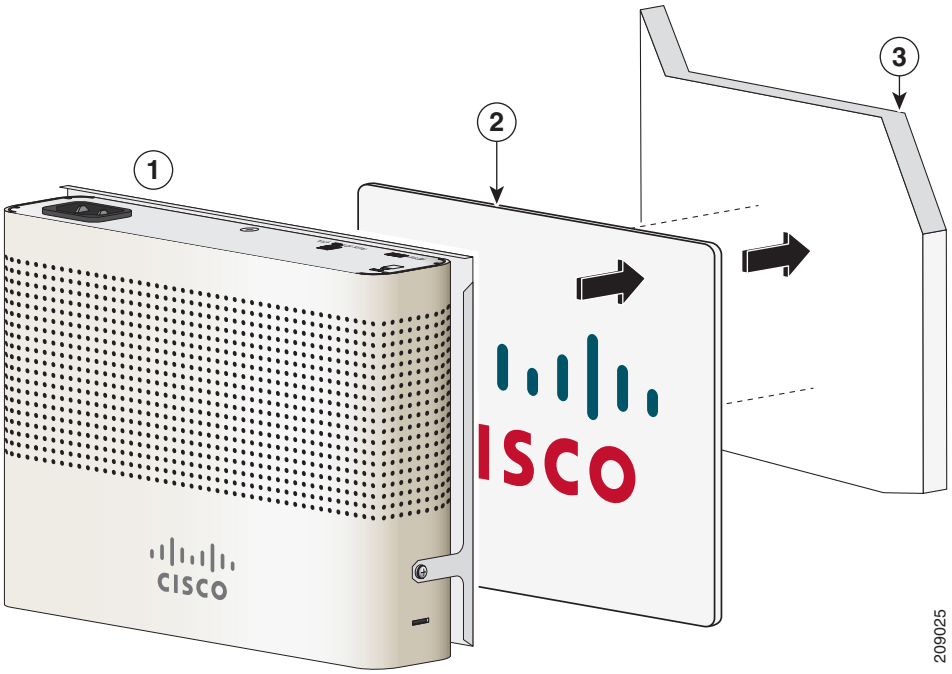
1	Switch	**2**	Number-10 Phillips pan-head screws

Step 3 Place one side of the magnet against the bottom of the mounting tray, as shown in Figure 2-13. Mount the magnet and switch on a metal wall.

Warning **Read the wall-mounting instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation to people and damage to the system.** Statement 378

Caution Do not wall-mount the switch with its front panel facing up. Following safety regulations, wall-mount the switch with its front panel facing down or to the side, to allow sufficient airflow and to provide easier access to the cables.

Figure 2-13 Wall-Mounting with a Magnet



1	Switch with the mounting tray attached	**3**	Metal wall
2	Magnet		

Warning **To prevent airflow restriction, allow clearance around the ventilation openings to be at least: 3 in. (7.6 cm)** Statement 1076

After you mount the switch, see the "After Installing the Switch" section on page 2-31 for information about configuring the switch.

In a Rack

Installing the switch in a rack requires an optional bracket kit that is not included with the switch. You can order these kits from your Cisco representative:

- 19-inch rack-mounting brackets (RCKMNT-19-CMPCT=)
- 23- and 24-inch rack-mounting brackets (RCKMNT-23-CMPCT=)

Warning **To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:**

- **This unit should be mounted at the bottom of the rack if it is the only unit in the rack.**
- **When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.**
- **If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.** Statement 1006

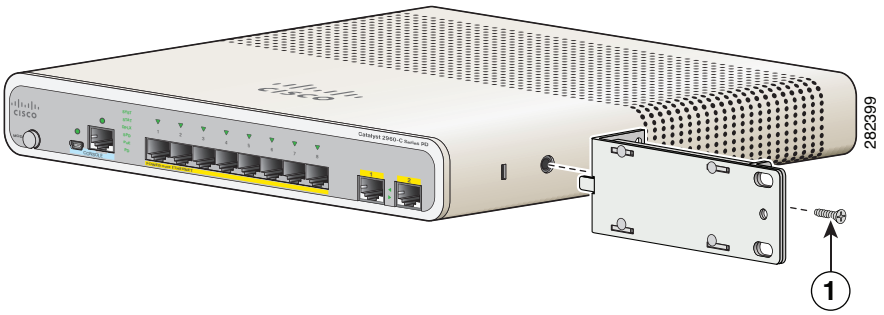
To install the switch in a rack, follow the instructions described in these sections:

- Attaching Brackets to the Switch, page 2-18
- Mounting the Switch in a Rack, page 2-19

Attaching Brackets to the Switch

Figure 2-14 shows how to attach a 19-inch bracket to one side of the switch. Follow the same steps to attach the second bracket to the opposite side.

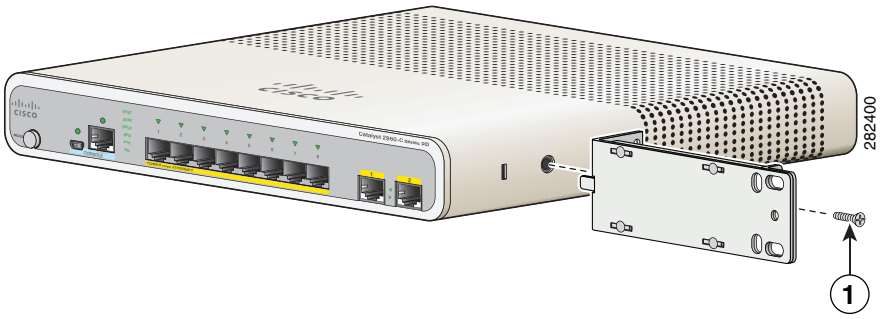
Figure 2-14 Attaching the 19-inch Brackets for Rack-Mounting



1	Phillips flat-head screw

Figure 2-15 shows how to attach a 23-inch bracket to one side of the switch. Follow the same steps to attach the second bracket to the opposite side.

Figure 2-15 Attaching the 23-inch Brackets for Rack-Mounting



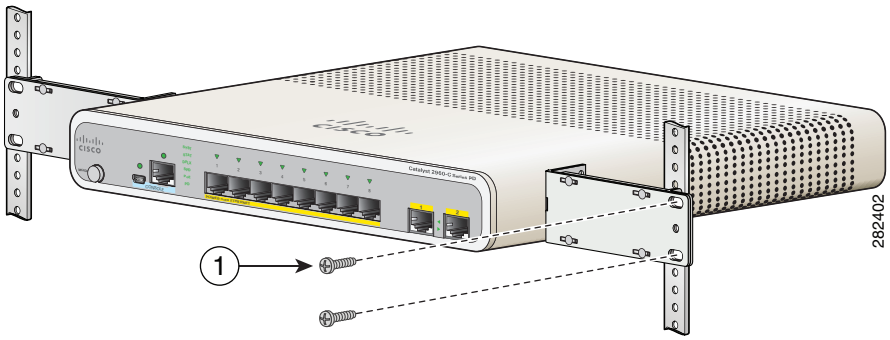
1	Phillips flat-head screw

Mounting the Switch in a Rack

After the brackets are attached to the switch, insert the switch into the rack, and align the bracket in the rack. Use either the number-12 or number-10 Phillips machine screws to secure the switch in the rack. See Figure 2-16.

Warning **To prevent airflow restriction, allow clearance around the ventilation openings to be at least: 3 in. (7.6 cm)** Statement 1076

Figure 2-16 Mounting the Switch in a Rack



1	Phillips machine screws

After you mount the switch, see the "After Installing the Switch" section on page 2-31 for information about the switch configuration.

On a DIN Rail

The DIN-mount kit (part number CMP-DIN-MNT=) is optional. You can order it when you order your switch, or you can order it later from your Cisco representative.

The DIN-mount kit contains:

- Two number-10 Phillips pan-head screws
- DIN rail mount

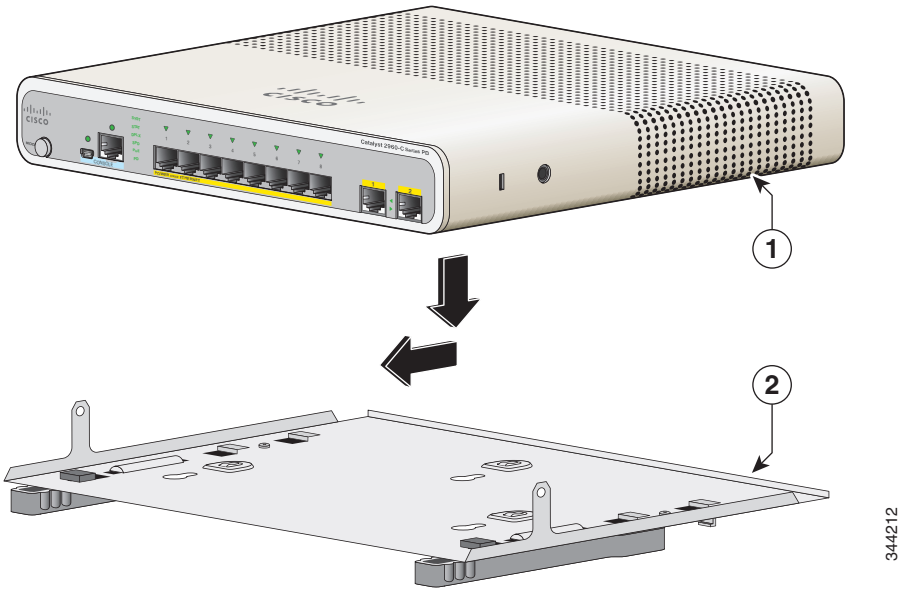
To install the switch on a DIN rail, follow the instructions described in these sections:

- Attaching the DIN-Mount Tray to the Switch, page 2-20
- Mounting the Switch on a DIN Rail, page 2-21
- Removing the Switch from a DIN Rail, page 2-23

Attaching the DIN-Mount Tray to the Switch

Step 1 Place the switch on the DIN rail mount. See Figure 2-17.

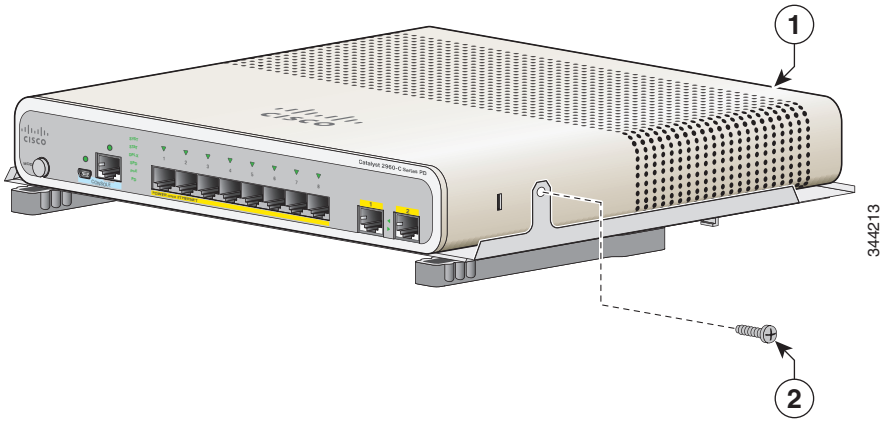
Figure 2-17 Placing the Switch on the DIN-Mount Tray



1	Switch	2	DIN rail mount

Step 2 Use the two number-10 Phillips pan-head screws to secure the DIN rail mount to the switch. See Figure 2-18.

Figure 2-18 Securing the DIN-Mount Tray to the Switch



1	Switch	**2**	Number-10 Phillips pan-head screws

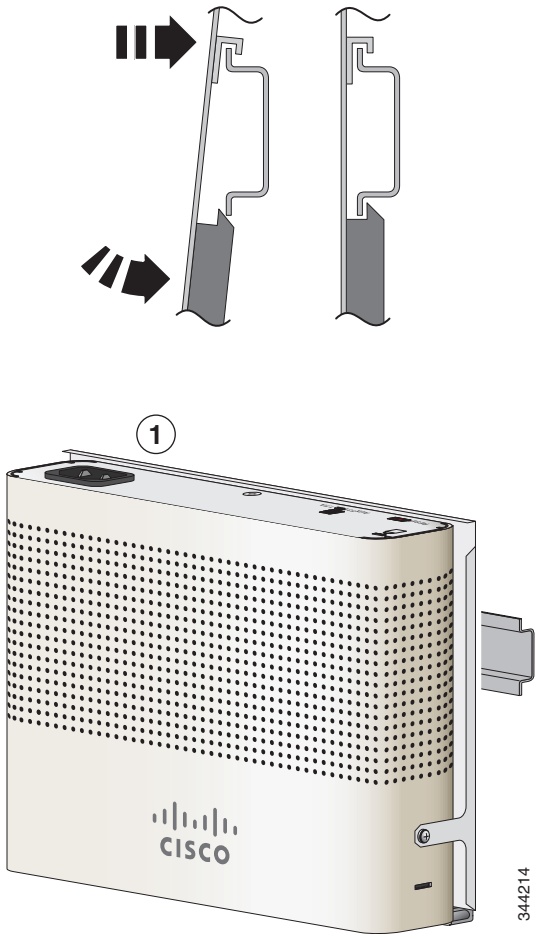
Mounting the Switch on a DIN Rail

Caution Do not install the switch with its front panel facing up. Following safety regulations, install the switch with its front panel facing down, to allow sufficient airflow and to provide easier access to the cables.

Warning **To prevent airflow restriction, allow clearance around the ventilation openings to be at least: 3 in. (7.6 cm)** Statement 1076

Step 1 Position the switch directly in front of the DIN rail, making sure that the top of the DIN rail mount clip hooks over the top of the DIN rail. See Figure 2-19.

Figure 2-19 Mounting the Switch on a DIN Rail



1	Switch

Step 2 Rotate the switch down toward the DIN rail until the release tabs on the DIN rail mount clicks.

Step 3 Lift lightly on the bottom of the switch to ensure that it is firmly locked in place.

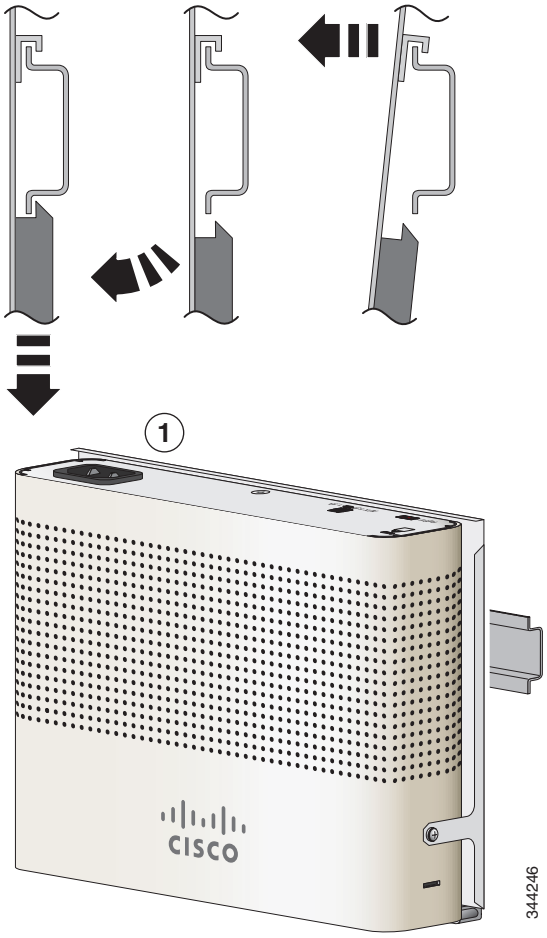
After you install the switch, see the "After Installing the Switch" section on page 2-31 for information about the switch configuration.

Removing the Switch from a DIN Rail

Step 1 Ensure that power is removed from the switch, and disconnect all cables and connectors from the front panel of the switch.

Step 2 Pull down on the DIN rail mount release tabs. As the clips release, lift the bottom of the switch. See Figure 2-20.

Figure 2-20 Switch Removal



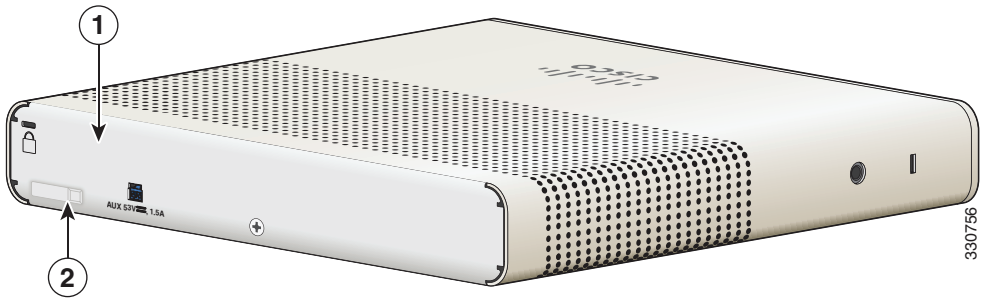
1	Switch

Installing a Cover for the Reset Button (Optional)

You can cover the reset button to prevent accidental or unauthorized reset of your switch. To install a cover on the reset button:

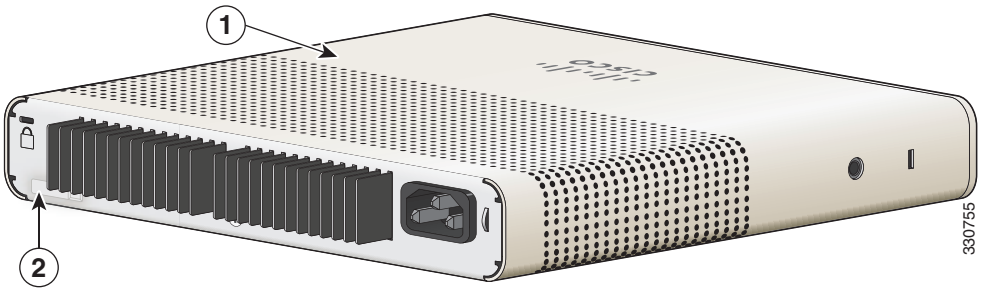
1. Locate the cover (in the accessory kit).
2. Remove the adhesive sticker from the back of the cover.
3. Apply the cover on the switch. See Figure 2-21 and Figure 2-22 as examples. You can apply the cover to other switch models as well.

Figure 2-21 Reset Cover on the Catalyst 2960CPD-8PT-L Switch



1	Switch	2	Reset button cover

Figure 2-22 Reset Cover on the Catalyst 2960CG-8PC-S Switch



1	Switch	2	Reset button cover

Installing the Power Cord Retainer (Optional)

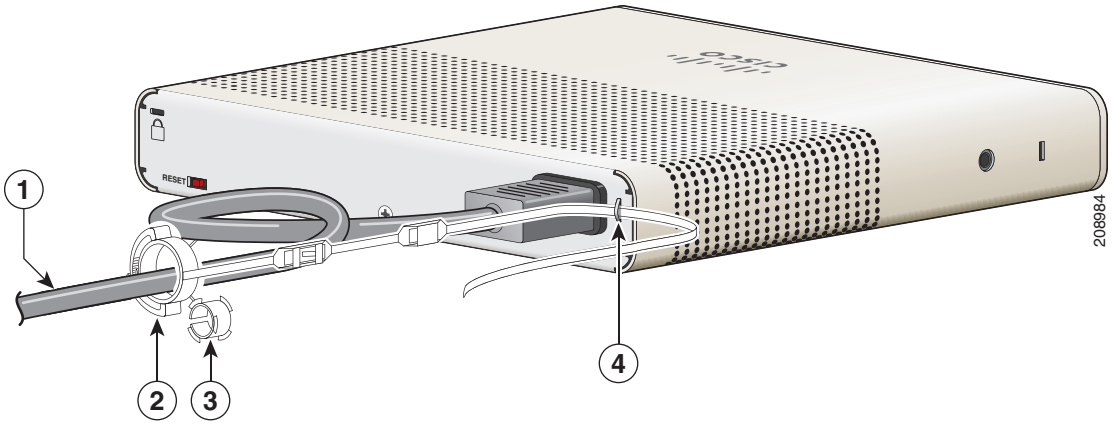
Note This section applies to switches with an AC power connector.

The power cord retainer part number (PWR-CLP=) is optional. You can order it when you order your switch, or you can order it later from your Cisco representative.

Step 1 Choose the sleeve size of the power cord retainer based on the thickness of the cord. The smaller sleeve can be snapped off and used for thin cords. See Figure 2-26.

Step 2 Slide the retainer around the AC power cord, and pass it around the loop on the switch. See Figure 2-23.

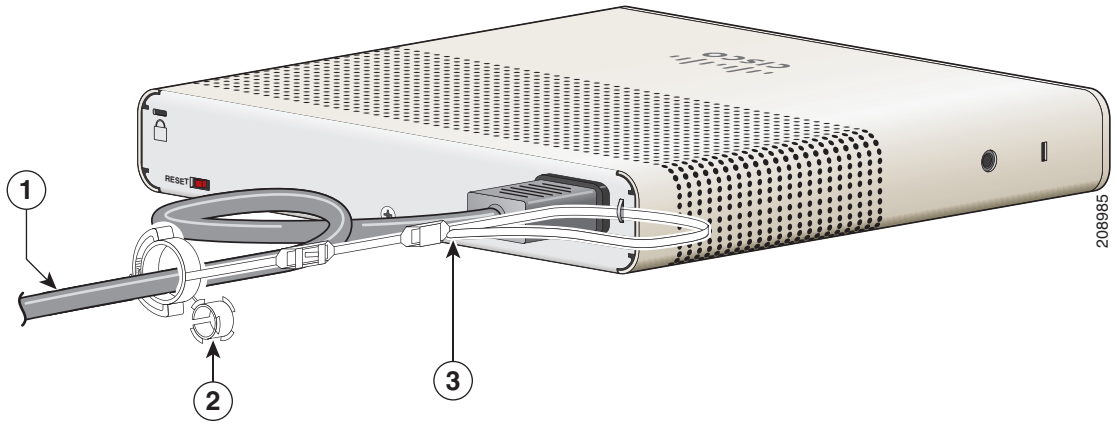
Figure 2-23 Inserting the Retainer through the Lanced Loop



1	AC power cord	3	Sleeve for thinner power cords
2	Power cord retainer	4	Loop

Step 3 Slide the retainer through the first latch. See Figure 2-24.

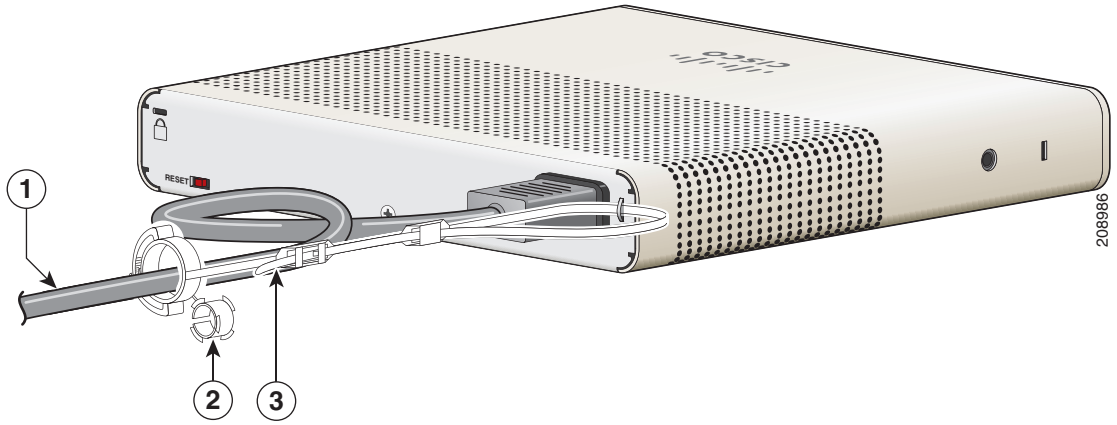
Figure 2-24 Sliding the Retainer Through the Latch



1	AC power cord	**3**	Latch
2	Smaller sleeve for thin power cords		

Step 4 Slide the retainer through the other latches to lock it. See Figure 2-25.

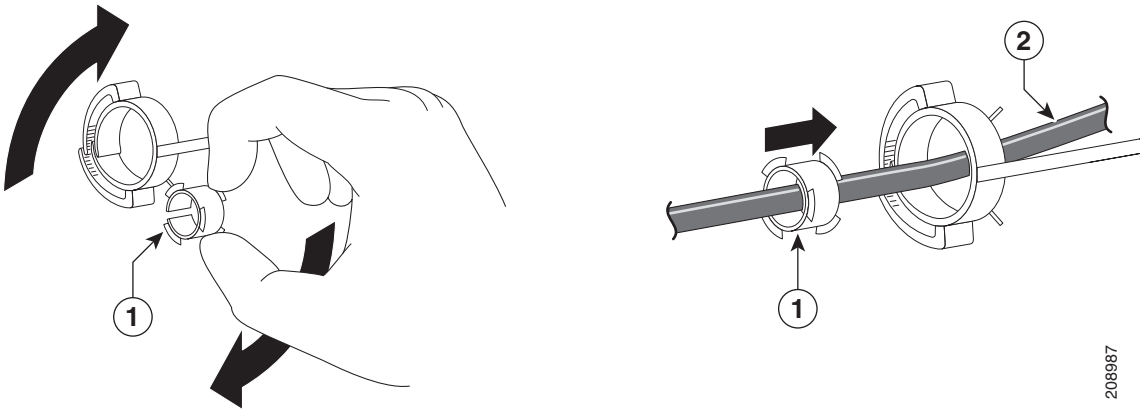
Figure 2-25 Locking the Retainer



1	AC power cord	**3**	Latches
2	Sleeve for thin power cords		

Step 5 (Optional) Use the small sleeve for thin power cords. Use the small sleeve to provide greater stability for thin cords. Detach the sleeve, and slide it over the power cord. See Figure 2-26.

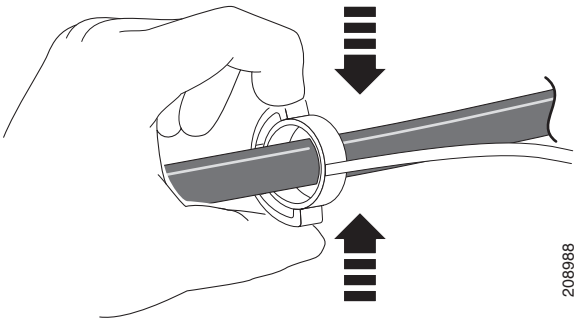
Figure 2-26 Sleeve Around the Power Cord



1	Sleeve for thin power cords	**2**	AC power cord

Step 6 Secure the AC power cord by pressing on the retainer. See Figure 2-27.

Figure 2-27 Securing the Power Cord in the Retainer



Installing the Cable Guard (Optional)

The cable guard prevents tampering with the cables after the cables are installed. The cable guard (CMP-CBLE-GRD=) is not included with the switch, but you can order it from your Cisco representative.

Note You can use the cable guard when the switch is mounted on a desk, under a desk, or on a wall.

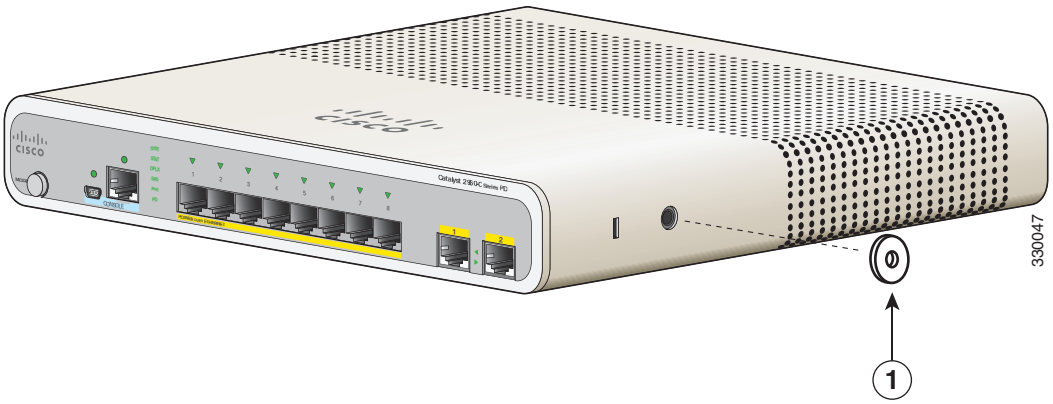
The cable guard is shipped with these items:

- Two 0.5 in. (12.7 mm) number-8 Phillips wood screws
- Two number-10 Phillips pan-head screws
- Two washers

Step 1 (Optional) Attach the supplied washers before you install the cable guard. See Figure 2-28.

Note This is only required if you are not installing the wall-mount brackets.

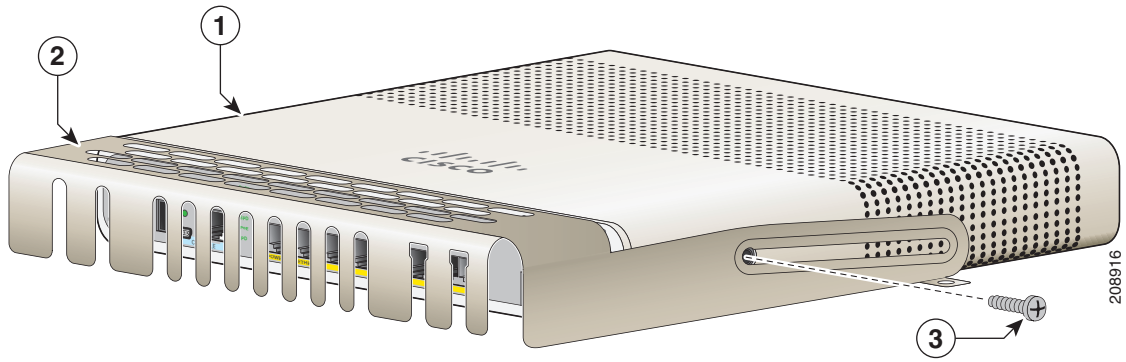
Figure 2-28 Using the Washer



1	Washer

Step 2 Use the supplied number-10 pan-head screws to attach the cable guard to the switch. See Figure 2-29.

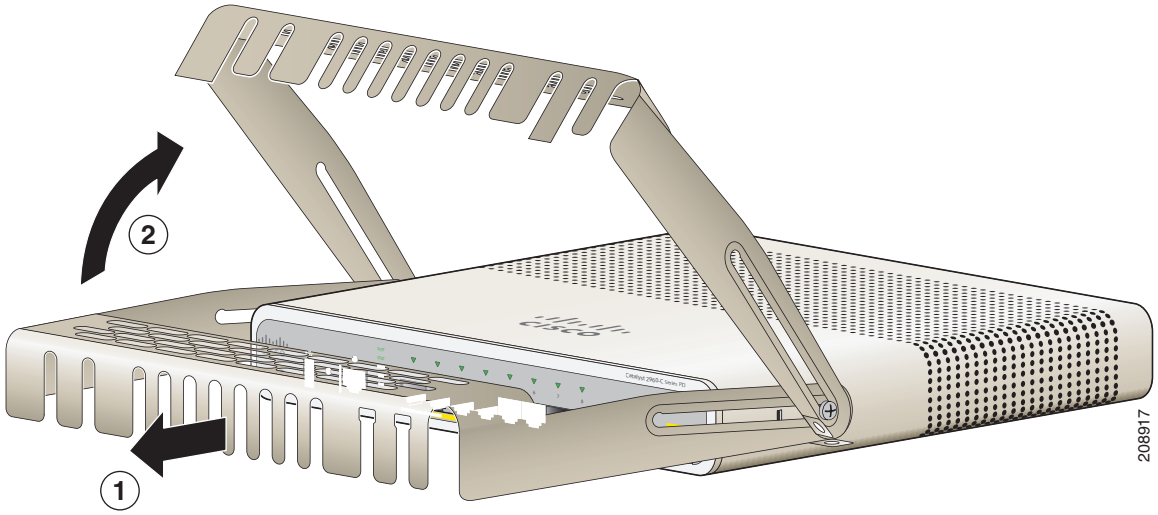
Figure 2-29 Attaching the Cable Guard to the Switch



1	Switch	**3**	Two number-10 Phillips pan-head screws
2	Cable guard		

Step 3 Loosen the number-10 Phillips pan-head screws, slide the cable guide out, and pivot it upwards so that you can install the cables. See Figure 2-30.

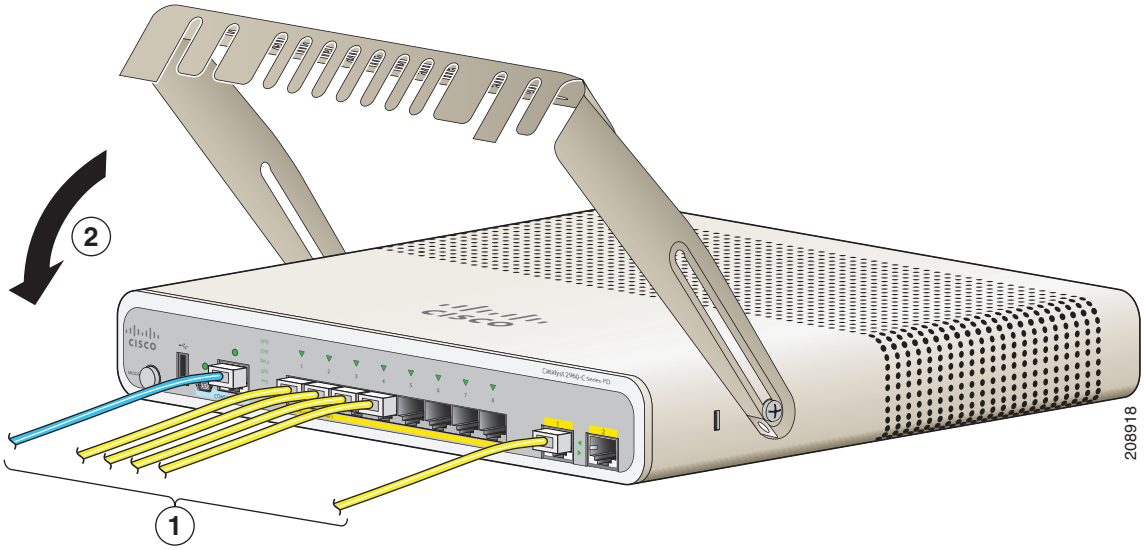
Figure 2-30 Pivoting the Cable Guard Upwards



1	Cable guard	**2**	Pivot direction for cable guard pivots

Attach the cables to the switch. See Figure 2-31.

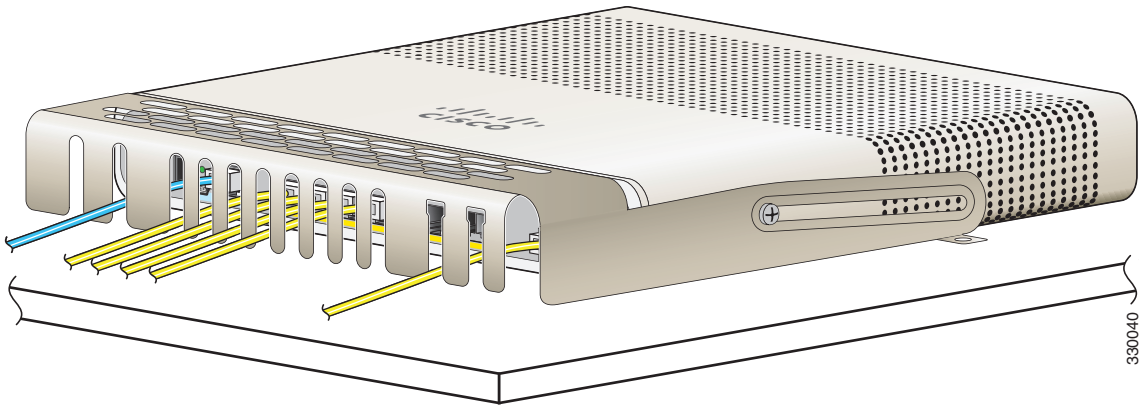
Figure 2-31 Attaching the Cables to the Switch



1	Cable guard	**2**	Pivot direction for cable guard pivots

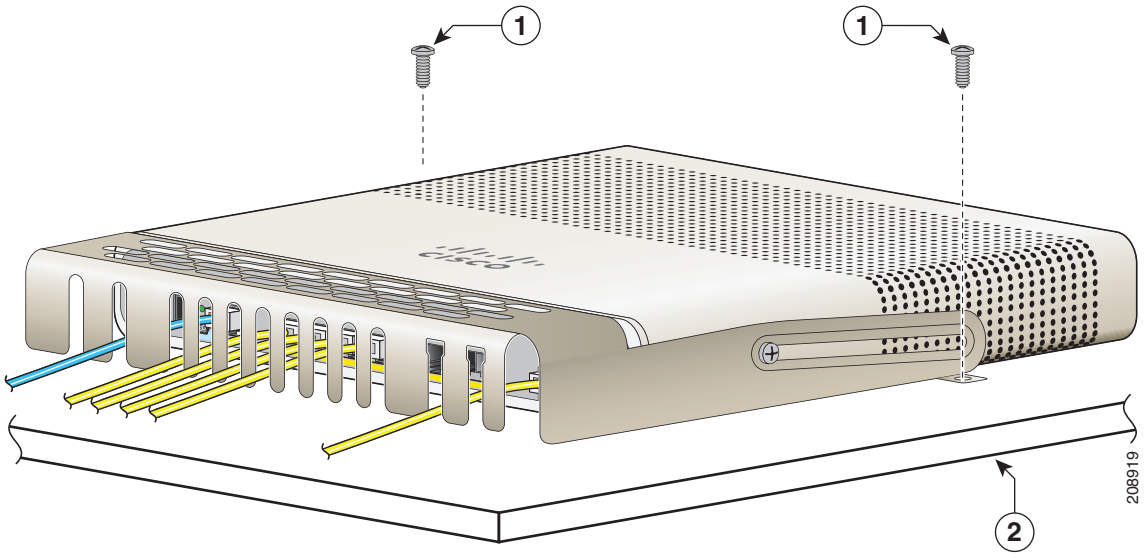
Step 4 Guide the connected cables through the slots in the front of the cable guard. Slide the cable guide in as shown in Figure 2-33. Tighten the screws.

Figure 2-32 Guiding the Cables through the Guard



Step 5 (Optional) To attach the cable guard to the desk or wall, use a 0.144-inch (3.7 mm) or a #27 drill bit to drill 1/2-inch (12.7 mm) holes at each of the two mounting locations. Insert the supplied 0.5 in. (12.7 mm) number-8 Phillips wood screws and tighten them as shown in Figure 2-33.

Figure 2-33 Securing the Cable Guard to the Desk



1	Number-8 Phillips wood screws	**2**	Desk or shelf

After Installing the Switch

1. Power on the switch. See the "Verifying Switch Operation" section on page 2-5.
2. Connect to a 10/100 or 10/100/1000 port, and run Express Setup. See the switch getting started guide for instructions.
3. Connect to the ports. See the "Connecting Devices to the Ethernet Ports" section on page 2-33 to complete the installation.

For configuration instructions about using the CLI setup program, go to Appendix C, "Configuring the Switch with the CLI Setup Program."

Installing SFP Modules

When installing SFP modules, observe these guidelines:

- Removing and installing an SFP module can shorten its useful life. Do not remove and insert any module more often than is absolutely necessary.
- To prevent ESD damage, follow your normal board and component handling procedures when connecting cables to the switch and other devices.

Warning **Class 1 laser product.** Statement 1008

Step 1 Attach an ESD-preventive wrist strap to your wrist and to a bare metal surface.

Step 2 Find the send (TX) and receive (RX) markings on the module top.

On some SFP modules, the TX and RX markings might be replaced by arrows that show the direction of the connection, either send or receive.

Step 3 If the module has a bale-clasp latch, move it to the open, unlocked position.

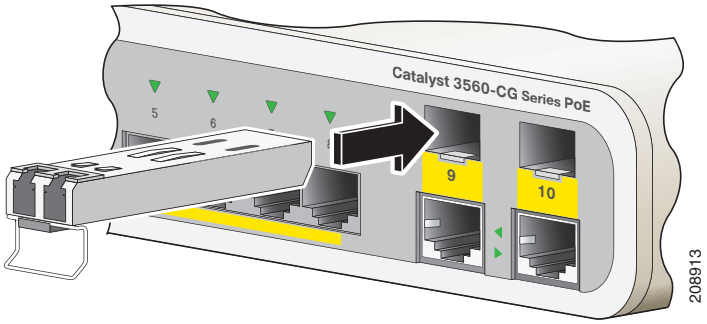
Step 4 Align the module in front of the slot opening, and push until you feel the connector snap into place.

Step 5 If the module has a bale-clasp latch, close it.

Step 6 For fiber-optic SFP modules, remove the dust plugs and save.

Step 7 Connect the SFP cables.

Figure 2-34 Installing an SFP Module



Caution Do not remove the dust plugs from the fiber-optic SFP module port or the rubber caps from the fiber-optic cable until you are ready to connect the cable. The plugs and caps protect the SFP module ports and cables from contamination and ambient light.

Removing SFP Modules

Step 1 Attach an ESD-preventive wrist strap to your wrist and to a bare metal surface.

Step 2 Disconnect the cable from the SFP module. For reattachment, note which cable connector plug is send (TX) and which is receive (RX).

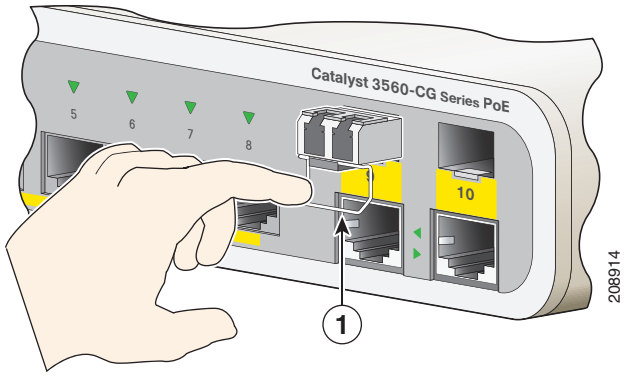
Step 3 Insert a dust plug into the optical ports of the SFP module.

Step 4 If the module has a bale-clasp latch, pull the bale out and down to eject it. If the latch is obstructed and you cannot use your finger, use a small, flat-blade screwdriver or other long, narrow instrument.

Step 5 Grasp the SFP module, and carefully remove it from the slot.

Step 6 Place the module in an antistatic bag or other protective environment.

Figure 2-35 Removing a Bale-Clasp Latch SFP Module



1	Bale clasp

Connecting Devices to the Ethernet Ports

- Connecting to the 10/100 and 10/100/1000 Ports, page 2-33
- Connecting to the PoE Ports, page 2-34

Connecting to the 10/100 and 10/100/1000 Ports

The 10/100 and 10/100/1000 Ethernet ports use RJ-45 connectors with Ethernet pinouts. The maximum cable length is 328 feet (100 meters). The 100BASE-TX and 1000BASE-T traffic requires Category 5, Category 5e, or Category 6 UTP cable. The 10BASE-T traffic uses Category 3 or Category 4 cable.

The autonegotiation feature is enabled by default on the switch. At this setting, the switch ports configure themselves to operate at the speed of the attached device. If the device does not support autonegotiation, you can set the switch port speed and duplex parameters. To maximize performance, either let the ports autonegotiate both speed and duplex, or set the port speed and duplex parameters on both ends of the connection.

See the switch software configuration guide or the switch command reference on Cisco.com for more information about autonegotiation and auto-MDIX.

If auto-MDIX is disabled, use the guidelines in Table 2-1 to select the cable for connecting the 10/100/1000 Ethernet ports to other devices. See the "Cables and Adapters" section on page B-3 for cable-pinout descriptions. See Figure 2-36.

Figure 2-36 Connecting to an Ethernet Port

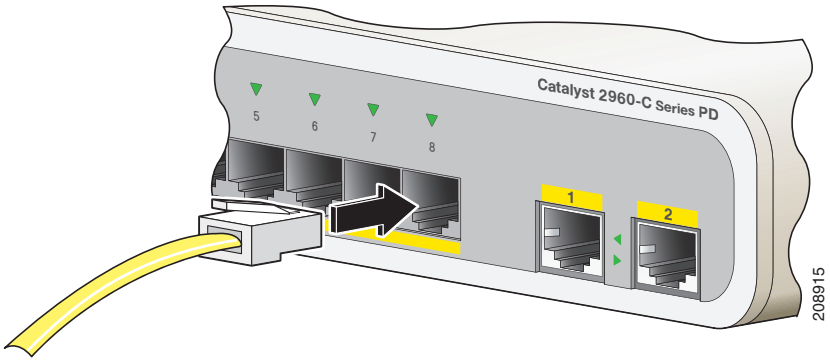


Table 2-1 Ethernet Cables (Auto-MDIX Disabled)

Device	Crossover Cable[1]	Straight-Through Cable[1]
Switch to switch	Yes	No
Switch to hub	Yes	No
Switch to computer or server	No	Yes
Switch to router	No	Yes
Switch to IP phone	No	Yes

1. 100BASE-TX and 1000BASE-T traffic requires twisted four-pair, Category 5, Category 5e, or Category 6 cable. 10BASE-T traffic uses Category 3 or Category 4 cable.

Connecting to the PoE Ports

The 10/100 PoE ports have the same autonegotiation settings and cabling requirements as those in the "Connecting to the 10/100 and 10/100/1000 Ports" section on page 2-33. These ports provide PoE power.

See the e "PoE Ports (Switches with PoE Ports)" section on page 1-5 for information on the cables and connectors.

The ports provide PoE support for 802.3af-compliant devices and also provide Cisco prestandard PoE support for Cisco IP Phones and Cisco Aironet Access Points.

On a per-port basis, you can control whether or not a port automatically provides power to a connected IP phone or an access point.

To access an advanced PoE planning tool, use the Cisco Power Calculator on Cisco.com:

http://tools.cisco.com/20/launch.jsp

You can use this application to calculate the power supply requirements for a specific PoE configuration. The results show output current, output power, and heat dissipation.

Warning **Voltages that present a shock hazard may exist on Power over Ethernet (PoE) circuits if interconnections are made using uninsulated exposed metal contacts, conductors, or terminals. Avoid using such interconnection methods, unless the exposed metal parts are located within a**

restricted access location and users and service people who are authorized within the restricted access location are made aware of the hazard. A restricted access area can be accessed only through the use of a special tool, lock and key or other means of security. Statement 1072

Caution Category 5e and Category 6 cables can store high levels of static electricity. Always ground the cables to a suitable and safe earth ground before connecting them to the switch or other devices.

Where to Go Next

To change the switch settings, you can use the switch default configuration or use any of the management options described in the "Management Options"section.